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EXAMINER

KATZ, VERA

ART UNIT

PAPER NUMBER

1794

MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/533,580 | Applicant(s) KIMURA ET AL. | |
| | Examiner Vera Katz | Art Unit 1794 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,13-15,23-29,43,44,54-56,58,65 and 67 is/are pending in the application.
- 4a) Of the above claim(s) 54-56,58,65 and 67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 13-15, 23-29, 43-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1, 2, 13-15, 23-29 and 43-44 in the reply filed on 04/03/09 is acknowledged. The traversal is on the ground(s) that the claimed dispersoid is not shown in the prior art (US 6235260) for the reason stated in the applicant's remarks. This is not found persuasive because as it was shown in the Office Action dated 01/05/09 the common technical feature of claim 1 is not a special technical feature, see response to the arguments below.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

2. Claims 27-28 objected to because of the following informalities: Claims 27-28, line 4 recite "a some divided portions". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 2, and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-2, lines 6, 6, 9 recites the limitation "the transmittance", "the spectral transmittance" and "the control", respectively. There is insufficient antecedent basis for this limitation in the claims. Claim 43, lines 4, 4, 6

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recites the limitation "the transmittance", "the spectral transmittance" and "the control", respectively. There is insufficient antecedent basis for this limitation in the claim.

Examiner Note

4. The Examiner notes that claims 1, 2, 13-15, 23-29 and 43-44 are product by process claims. "[E]ven though product-by-process claims are limited by and defined by the process; determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process". (*In re Thorpe*, 227 USPQ 964,966). Once the examiner provided a rationale tending to show that the claimed product appears to be the same or similar to that of prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious different between the claimed product and the prior art product (*In re Marosi*, 710 F.2d 798,802,218 USPQ 289,292 (Fed. Cir. 1983), MPEP 2113).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Laid-open Patent Application No. 10-298769 A, cited in the instant application. The reference teaches a dispersoid, having metal-oxygen bonds, for example, indium oxide. This dispersoid is obtained by mixing a metal compound having at least three hydrolysable groups, for example, indium alkoxide, such as $\text{In}(\text{OCH}_3)_3$ or others, see examples 1-14 of Table 1 (machine translation). It is mixed with a given amount of water in the absence of a base or dispersion stabilizer and it is mixed at the temperature below 0°C , for example, -75°C ; [0032-0033]. The molar ratio of water to metal compound is 0.6 and 0.8 and 1 mole/mole of metal compound; [0033 and 0046]. These values are within ranges of claims 1 and 2 of instant application.

Considering the spectral transmittance range limitation of claims 1 and 2, as it was shown above, the dispersoid is transparent and homogeneous and is prepared by the same sol-gel process and from the same precursors as those of the reference and, the final product is similar to that of the instant claims and used for the same applications. It is expected that similar materials formed or treated in a similar manner to that disclosed in the instant specification will possess similar characteristics. It has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. In re Best, 195 USPQ 430, 433 (CCPA 1977).

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6. Claims 1, 2 and 13, 14, 15, 23, 27, 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Toki (6235260).

Toki teaches a dispersoid, having metal-oxygen bonds, for example, tin or indium oxide. This dispersoid is obtained by mixing a metal compound having at least three hydrolysable groups, for example, Ti or indium alkoxide, such as $\text{In}(\text{OCH}_3)_3$ or tin alkoxide, see examples of Table 1. It is mixed with a given amount of water in the absence of a base or dispersion stabilizer and it is mixed at the temperature below 0°C , for example, -75°C ; [col.7, line 30]. The molar ratio of water to metal compound is, for example 0.5 and 1 mole/mole of metal compound; these values are within ranges of claims 1 and 2 of the instant application; [tables 1 and 4]. With regards to “the spectral transmittance...etc.,” recitation, the dispersoid of Toki is transparent and homogeneous and is prepared by the same sol-gel process and from the same precursors as those of the reference and, the final product is similar to that of the instant claims and used for the same applications. It is expected that similar materials formed or treated in a similar manner to that disclosed in the instant specification will possess similar characteristics. It has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. In re Best, 195 USPQ 430, 433 (CCPA 1977). Considering claims 13, and 14, Toki teaches a dispersoid having metal-oxygen bonds, obtained by mixing in the absence of a stabilizer a partial hydrolysate with water.

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Examples 27-42 of col.12 disclose alkoxides, having at least three hydrolysable groups added first to ethanol in the absence of acid, base and stabilizer. This mixture is considered to be a partial hydrolysate. The hydrolysate is mixed with a mixture of organic solvent and water, the temperature is -75°C , which is below 0°C and below -20°C , see Table 4. A homogeneous sol was prepared and it is considered to be prepared without aggregation; [col. 12, line 60]. The ethanol used to prepare a partial hydrolysate at least inherently contains some water. The amount of added water to the solution in these examples is 0.6 mole/mole. This value is within the range. The water used in the original ethanol is not counted. In addition, the recitation "can be stably dispersed without aggregation in an organic solvent with an amount of water equal to at least 0.5 mole but less than 2 moles per mole of the metal compound minus the amount of water used to prepare the partial hydrolysate" is not a positively recited limitation and the prior art product is considered to be capable of meeting this limitations. Furthermore, the recitation above is considered to be a process step and does not impart a structural limitation to the product as claimed.

Considering claim 15, the reference teaches that metal alkoxide hydrolysis at the temperature of -20°C without stabilizing and the given temperature may be below -20°C ; [col.7, lines 26-31].

Considering claim 23, the reference teaches that after cooling the mixed solutions to predetermined temperature the solutions are mixed and returned to room temperature; [col.12, lines 55-59].

Considering claims 27-29, the water is added in a some divided portions to a metal compound, for instance, examples 27 to 42 teach that in the first step the water is added to the mixed separate solution of water-ethanol; the following step is mixing both metal compound solution and the water-ethanol solution. The temperature is -75°C , which is below 0°C . The water is added in the amount of 0.6 mole/mole, which is within the range of the instant application. The step of admixing takes place at the temperature below 0°C ; [col. 12, lines 49-58]. However, the recitations of steps of water addition of claims 27-29 are process step limitation that does not provide structural limitations to the product.

Claims 43-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Clark (48013990). Clark teaches that the dispersoid dispersed stably in organic solvent without aggregations because a smooth and clear sol is obtained; [col.5 and 7, lines 62 and 28, respectively] with the average particle size of between 10 and 100 Å; [col.5, line 30]. This range is within the range claimed in the instant application. Considering the “the spectral transmittance...etc.,” recitation, the dispersoid of Clark is clear; [col. 7, line 28], and is prepared by the same sol-gel process and from the same precursors as those of the reference and, the final product is similar to that of the instant claims and used for the same applications. It is expected that similar materials formed or treated in a similar manner to that disclosed in the instant specification will possess similar characteristics. It has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or

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obviousness will be considered to have been established over functional limitations that stem from the claimed structure. In re Best, 195 USPQ 430, 433 (CCPA 1977).

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Claim Rejections - 35 USC § 103(a)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark (48013990) in view of Toki (6235260).

Clark discloses a dispersoid having metal-oxide bonds, obtained by mixing a metal compound having at least three hydrolysable metal-oxide bonds, for example, hydrolyzing aluminum sec-butoxide, with water in a solution diluted with a hydrocarbon solvent other than alcohol for example, MEK, and an alcohol solvent [col. 5, lines 16 - 48]. Clark does not specifically teach a mixture of hydrocarbon solvent, water and alcohol. However, Toki teaches that the solvent used with water can be a mixed solvent and gives a range of possible hydrocarbon and alcohol solvents; [col. 6, lines 28-55 and col. 7, line 42-48]. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the hydrocarbon or alcohol solvent of Clark including a mixed hydrocarbon/alcohol solvent as defined by Toki, to succeed in improvement of the film formation characteristics and formation more homogeneous film; [Toki, col. 6,

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line 53-56] as well as in applying a low-cost, low viscosity solvent; [Clark, col. 5, line 44].

The dispersoid is obtained in the absence of at least one acid, base or stabilizer at room temperature. The given temperature range is between 15°C and 25°C, that is room temperature; [Clark, col.8, line 43].

Considering claim 25, the proportion of aqueous medium to metal compound may be 2 moles/mole; [col.7, line 50]. If aqueous medium is a water-organic composition with water of , for example 99% or less than the proportion of water to metal compound is less than 2 moles/mole but more than 0.5; [col.7, line 38].

2. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark (48013990) in view of Toki (6235260) as evidenced by Handbook of Chemistry and Physics, 1970-1971, pp. C-290 and C-455. The organic solvents for example, alcohol such as ethanol and hydrocarbon solvent such as acetone are present in the prior art references; [Toki, col. 6, line 34 and col. 7, line 48]. As evidenced by Handbook of Chemistry and Physics the solvents above have unlimited or infinitive solubility in water and each other, see numerals e336, p. C-290 and p1649, p. C-455. Based on aforementioned, the concentration of water of the saturation solubility is regarded to be a concentration of water in the mixtures with unlimited solubility. The concentration of water in the mixed solvent is of between 30 and 50%; [Clark, col. 7, line 40]. This range overlaps the range of instant application. It would have been obvious to one of ordinary skill in the art at the time of the invention to have selected the overlapping portion of the ranges disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, In re Malagari, 182 USPQ 549.

Response to Arguments

3. Applicant's arguments filed 04/03/09 have been fully considered but they are not persuasive.

4. In view of applicant's amendments and arguments the applicant traverses the section 112, second paragraph rejection of the Office Action mailed on 01/05/09. The rejection of claims 13, 26 and 43 are withdrawn.

5. The applicant traverses the rejections of claims 1 and 2 under 35 U.S.C. 102(b) over JP 10-298769. The traversal is on the ground of that the reference product requires an adjustment of pH while the instant specification doesn't require an adjustment. The Examiner does not agree. This statement is not commensurate in scope with the instant claims. The recitation of claims 1 and 2 "the absence at least one selected from the group consisting of acid, a base and ...a stabilizer" allows to apply acid, base and/or a stabilizer, therefore, the prior art meets this limitation.

As to new limitation of "the spectral transmittance" of claims 1, and 2, see the arguments related to corresponding claims in the rejections above. Accordingly, the rejection of claims 1 and 2 are maintained.

6. The applicant traverses the rejection of claims 1-2, 13-15, 23 and 27-29 under 35 U.S.C. 102(b) over US 6235260. Regarding the new limitations of spectral transmittance of claims 1 and 2-see arguments in the rejections above. The applicant further argues that the ethanol does not contain water inherently. The Examiner does not agree. See Material Safety data sheet of Ethanol. Additionally, as it was shown

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above in the arguments related to claim 13, the water addition step is a process limitation that is not considered to provide structural definition to the product claimed.

With regards to the “divided portion” argument, as it was shown above, weight is not given to this process limitation. As to pH stabilizing argument, see the Examiner’s reply related to claims 1 and 2, above. Based on aforesaid, the rejection of claims 1-2, 13-15, 23 and 27-29 under 35 U.S.C. 102(b) over US 6235260 are maintained.

7. Applicant's traversal of the rejection with respect to claims 43-44 under 35 U.S.C. 102(b) over US 4801399 have been fully considered but they are not persuasive, see Examiner’s response and claim rejection related to claims 43 and 44 regarding spectral transmittance in the rejection above. Therefore, the rejection of claims 43-44 under 35 U.S.C. 102(b) over US 4801399 are maintained.

8. Applicant's arguments with respect to claims 24-26 under 35 U.S.C. 102(b) over US 4801399 have been considered but are moot in view of the new ground of rejection. The new ground of rejection of claims 24-26 is necessitated by new limitation of claim 24 “other than an alcohol solvent”.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vera Katz whose telephone number is (571)270-7082.

The examiner can normally be reached on M - Th 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JENNIFER McNEIL can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vera Katz/
Examiner, Art Unit 1794

/JENNIFER MCNEIL/
Supervisory Patent Examiner, Art Unit 1794